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to give you a better account of them: this is at your service in the mean time.

E. H.

SOUTHAMPTON LEAD MINE.

The lead mine at Southampton is becoming an object of very considerable curiosity and importance. Professor Silliman of Newhaven, who visited it in the summer of 1810, gave an interesting and particular account of it up to that time, in the *New-York Mineralogical Journal*.

The vein, which contains the ore, is very extensive in length; but, as far as it has yet been explored, is very narrow. Several shafts were sunk, one to the depth of seventy or eighty feet. But it was found extremely troublesome to work them, on account of the quantity of water; which was so great as to make it necessary to keep the machines for carrying it up, going night and day. For this reason the proprietors were induced to abandon the works at the vein for the present; and commenced running a level to it, from the foot of a hill about sixty rods distant from it.

It is this level which at present is the principal object of curiosity. The cavity of it is six feet square, and at the time the writer visited it (the middle of June last) extended seven hundred and twenty-six feet. At the further extremity, the perpendicular distance from the surface of the ground to the bottom of the cavern, is one hundred and ten feet; and where it strikes the vein it will be twenty or thirty feet more. Five hundred feet from the mouth, a shaft for the circulation of air has been sunk, (or rather *raised* from the bottom, for it was cut through from the bottom upwards,) which is ninety feet deep.

Except about one hundred feet at the entrance, which is sand, supported by timbers, the whole course of the cavern is through solid rock. The rock for the first few hundred feet, appears like indurated sand, thickly interspersed with pebbles of very hard quartz, from the size of buck-shot to that of a cannon ball. As you advance, the rock grows harder and firmer. At the extremity, it is principally granite of various appearances. In some places, masses of quartz and of felspar may be obtained distinct, that will weigh several pounds. In others it is quite fine and apparently compact. The colours are very various, generally different shades of green. The whole of the

compound rocks disintegrate on exposure to the atmosphere, so as to appear much like coarse sand.

In the progress of the work several interesting fossils have been found. Very good specimens of sulphate of barytes have occasionally been obtained. At about three hundred feet from the mouth, a small vein of coal was discovered nearly at right angles with the level. The coal was not very combustible, and was strongly impregnated with sulphur. Whether it will ever be an object to pursue it, is perhaps doubtful. Nearly a hundred feet farther on, is a vein of slate, about six inches thick, extending horizontally across the passage, and rising gradually as it advances, until it goes out at the roof. The slate is very soft and disintegrates slowly, on exposure to the weather.

This level has already been the labour of about four years ; and it will probably take at least two more, to reach the vein. The nature of it necessarily limits the number of workmen to four or five ; and the rock is so hard that it can be worked only by drilling and blasting. A day's labour, with all the hands, advances the work only half a foot. The bottom of it, is covered with water to the depth of two feet ; except a few rods at the extremity, where it is kept back by a dam, in order to accommodate the workmen, on which a boat plies to transport the stone, workmen, visitors, &c. The water is supplied and renewed, by trickling down the roof and sides, and by a small stream which runs down the perpendicular shaft.

To a stranger the passage into the earth is peculiarly striking. You seat yourself in a flat bottomed boat, with two or three lamps in it—your boatman sitting forward, with a short pole in his hands, with which he pushes you along by propping it alternately, from side to side, against the projections in the walls. Till you have passed the timbered walls, your posture is very much constrained by the lowness of the roof. You may then sit at your ease, occasionally nodding your head, however, to avoid a projecting rock. The boatman sings a tune, which resounds through the cavern in a manner indescribably beautiful. As you approach the shaft, the resounding of the water-fall powerfully impresses your imagination, with the idea of an immense cataract. Having passed this (which falls at the side, only giving you a very slight sprinkling) as you draw towards the end of the cavern, the total darkness, except the feeble light

which proceeds from your dim lamps, the thickness of the atmosphere, the sound of the workmen's hammers, and the sulphureous smell of the gunpowder, might well have furnished the poets with new images for their descents to Avernus. After viewing the works, and conversing with the workmen, who are very civil, you return in the same way you entered, and will be apt to feel no slight pleasure at again beholding the cheering beams of the sun.

BASALTICK COLUMNS.

On the west side of Mount Holyoke,* three miles from Northampton, is a series of basaltick columns, in some measure like those of the celebrated Giant's Causeway, in Ireland. They form the side of the mountain for a distance of ten or twelve rods, and vary in height from sixty to more than a hundred feet. Their course inclines a little from the perpendicular, sloping gently towards the mountain.

These pillars are uniformly hexagonal prisms, varying in regularity, their sides being from eight to thirty inches wide. The diameters of the different prisms are from two to four feet. In some parts, several ranges of columns appear to have been broken away; for the hill below seems composed almost entirely of their fragments. The forms of the fragments bear no direct resemblance to the original columns, but are mostly small rhomboidal prisms, with irregular terminations.

In one place for a length of about twenty feet, ten distinct ranges of columns may be seen projecting above, attached by their sides to the ranges within, whose lower portions are gone, while corresponding stumps (if they may be so called) are visible among the rubbish below. Four of these projecting ranges are only about fifteen feet above

* Mount Holyoke is a part of a range of mountains, that extends from the vicinity of New-Haven, in a north-easterly direction, into Massachusetts, and crosses Connecticut River between Easthampton and South-Hadley, when it takes the name above-mentioned. Nearly opposite Northampton, there is a high peak of this mountain, which commands a very extensive view of the surrounding country, and is a very frequent and fashionable resort for parties of pleasure and curiosity.

It is to be observed, that the measures and distances mentioned in the above article, are not given from actual measurement, but from the judgment of the writer. Being only on a short visit to that part of the country, he regrets that it was not in his power to collect materials for a more complete account of that interesting object of curiosity.